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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ANDREWS, MICHAEL

ART UNIT

PAPER NUMBER

2834

NOTIFICATION DATE

DELIVERY MODE

04/12/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/591,089

Applicant(s)

REINSCHKE ET AL.

Examiner

MICHAEL ANDREWS

Art Unit

2834

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7, 9-11 and 13-26 is/are pending in the application.
- 4a) Of the above claim(s) 13-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7 and 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

- 5) ☐ ~~Notice of Informal Patent Application~~

- 6) ☒ Other: DE1143578.pdf, DE1143578translation.pdf

DETAILED ACTION

This Office Action is responsive to the Applicant's communication filed February 2, 2010. In virtue of this communication and the amendment concurrently filed:

- claims 7 and 9-11 were previously pending;
- claims 13-26 were added by the amendment; and thus
- claims 7, 9-11, and 13-26 are now pending in the instant application.

Election/Restriction

1. Newly submitted claims 13-26 are directed to an invention that lacks unity of invention from the invention originally claimed for the following reasons:

- Claims 13-19 recite the limitation of the center position being defined as the position "in which the armature may symmetrically oscillate relative to the yoke body"; this special technical feature is not recited in the original claims;
- Claims 20-26 recite the limitation of the armature being aligned "with the center of the yoke body and/or windings thereof"; this special technical feature is not recited in the original claims;
- The original claims recite the limitation "wherein the spring is configured as a leaf spring"; this special technical feature is not recited in the new claims.
- Further, the absence of the "leaf spring" from the new claims allows for a much greater search area. Well known in the art are oscillating piston type linear drive units which use coil springs surrounding or coaxial to the armature unit. This type of motor would not read on the "leaf spring" type of unit, but

the relevant classes/subclasses would need to be searched in order to consider the newly added claims.

Since the applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. **Accordingly, claims 13-26 are withdrawn from consideration as being directed to a non-elected invention.** See 37 CFR 1.142(b) and MPEP § 821.03.

Response to Arguments

2. Applicant's arguments filed February 2, 2010 have been fully considered but they are not persuasive.

The Applicant's first argument (page 6, line 18 to page 7, line 18) states that Rumswinkel (DE 1143578) does not disclose that the centers of the armature and yoke are aligned when the armature is in the center position. Claim 7, including the newly added text, does not fully define the center position or limit it to the equilibrium position of the spring (which is what the Examiner believes is intended). The center position, instead, is defined only as "the position the armature part adopts **when oscillating** between its maximum lateral deflection positions". Thus, the center position can be selected from any position lying between the maximum deflection points, including the position in which the centers of the armature and yoke are aligned. Thus, this argument is unpersuasive, and the rejection of claim 7 is maintained.

The Applicant's second argument (page 7, lines 19-23) states that Rumswinkel does not disclose the leaf springs being "tensioned transverse to the direction of movement". Figures 2-3 of Rumswinkel show the direction of movement to be in the horizontal direction, as indicated by the arrows and stated in the first paragraph of the document. The leaf springs are shown extending transverse, in a diagonal or perpendicular direction, to the direction of movement. This arrangement is identical to that which is shown in figure 1 of the present application. The Applicant has asserted that limitations clearly shown in the drawings are not disclosed by the reference. Without some explanation of how this differs from the claimed invention, this argument is also unpersuasive.

The Applicant's third argument (page 7, lines 24-26) states that Rumswinkel does not disclose "a plurality of springs disposed on each side of the center position", as recited in amended claim 9. While it is true that Rumswinkel does not disclose multiple springs on both sides of the device, this is not what is being claimed. The claim language specifies "a plurality of springs" and that the plurality is disposed on both sides of the device. Thus, the plurality of springs disclosed by Rumswinkel (there are two springs shown), which is disposed on both sides of the drive unit (also shown in the figures), continues to read on the amended claim language.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 7, 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Rumswinkel (DE 1143578).

With regard to claim 7, Rumswinkel discloses a linear drive unit (see col. 1, lines 1-5 and figures 1-3) comprising:

a yoke body [1] having an exciter winding providing a magnetic field (see col. 1, lines 5-10);

a magnetic armature part [2, 3] which is set in linear oscillating motion about a center position in an axial direction (reference [20] designates the direction of movement) by the magnetic field of the winding (see col. 1, lines 10-19) the center position being the position the armature part adopts when oscillating between its maximum lateral deflection positions (defining the center position as any position the armature reaches between its maximum deflection points does not impose any additional limitation on the structure of the device), wherein a center of the armature is aligned with a center of the yoke body in the center position (As stated above, the center position is only defined as any point within the limits of the armature's oscillation. Therefore, the center position can be selected as that position in which the centers of the armature and yoke are aligned.); and

a spring [4] having a fixed end clamped in a fixed manner with respect to the yoke body [1] and an oscillating end coupled to the armature part [2, 3] at a point of

application and acting on the armature part in the direction of motion (see figure 1 and col. 1, lines 33-45); and

wherein in the center position of the armature part, the point of application of the spring on the armature part being displaced axially by a predetermined distance [b] in relation to its clamping position (see figure 3), and

wherein the spring is configured as a leaf spring tensioned transverse to the direction of movement of the armature part (see figure 1; the spring is tensioned vertically while the direction of motion [20] is horizontal in the drawings).

With regard to claim 9, Rumswinkel discloses the drive unit according to claim 7, as stated above, further comprising a plurality of springs [4] disposed on each side of the center position (see figures 1-3).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rumswinkel.

With regard to claim 11, Rumswinkel discloses the drive unit according to claim 7, as stated above, except that Rumswinkel does not expressly disclose that the spring has a spring constant selected such that the characteristic frequency of the drive unit in cooperation with the total oscillating mass is lower than the frequency of the driving force. However, it has been held that if the product in a product-by-process claim is the same as, or obvious from, a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore, to select the spring stiffness based on the driving force in making the drive unit of Rumswinkel would have been obvious to one of ordinary skill in the art at the time the invention was made.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zabar (US 6,323,568 B1) in view of Rumswinkel.

With regard to claim 10, Zabar discloses a linear drive unit [2] (see figures 1-3) comprising:

a yoke body [10, 20] having an exciter winding [15, 25] providing a magnetic field (see col. 3, lines 12-24);

a magnetic armature part [30-34] which is set in linear oscillating motion about a center position in an axial direction by the magnetic field of the winding (see col. 3, lines 36-40);

a spring [40] having a fixed end [42, 43] clamped in a fixed manner with respect to the yoke body [10, 20] and an oscillating end [41] coupled to the armature part [30-34] at a point of application and acting on the armature part [30-34] in the direction of motion (see col. 4, lines 30-36);

wherein the armature part [30] is connected to a plunger [3] of a compressor [4, 5, 6] (see col. 2, line 62 through col. 3, line 3).

Except that Zabar does not expressly disclose that, in the center position of the armature part, the point of application of the spring on the armature part being displaced axially by a predetermined distance in relation to its clamping position, and the axial displacement of the point of application of the spring on the armature part being provided in the direction away from the compressor.

Rumswinkel discloses the drive unit according to claim 7, as stated above, where the armature part is displaced axially in relation to its clamping position.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the linear drive unit of Zabar by offsetting the armature part away from the compressor as taught by Rumswinkel, for improving the efficiency thereof, since Rumswinkel teaches that such a drive unit minimizes the air gap between the magnetic components (see col. 1, lines 25-32).

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Andrews whose telephone number is (571)270-7554. The examiner can normally be reached on Monday through Thursday between the hours of 7:30 and 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen Leung can be reached at (571)272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quyen Leung/
Supervisory Patent Examiner, Art Unit 2834

/M. A./
Examiner, Art Unit 2834